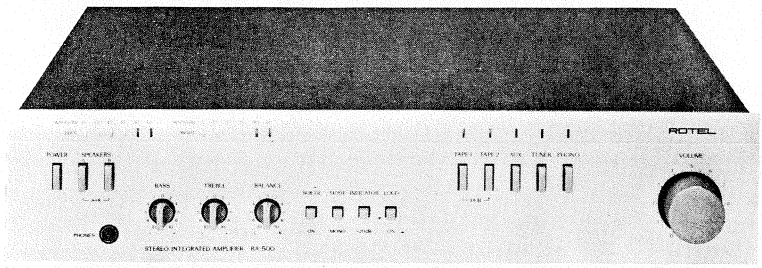
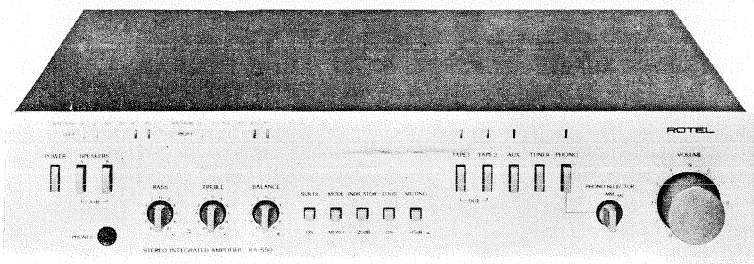
ROTEL®

Technical Manual



STEREO INTEGRATED AMPLIFIER

RA-500



STEREO INTEGRATED AMPLIFIER

RA-550

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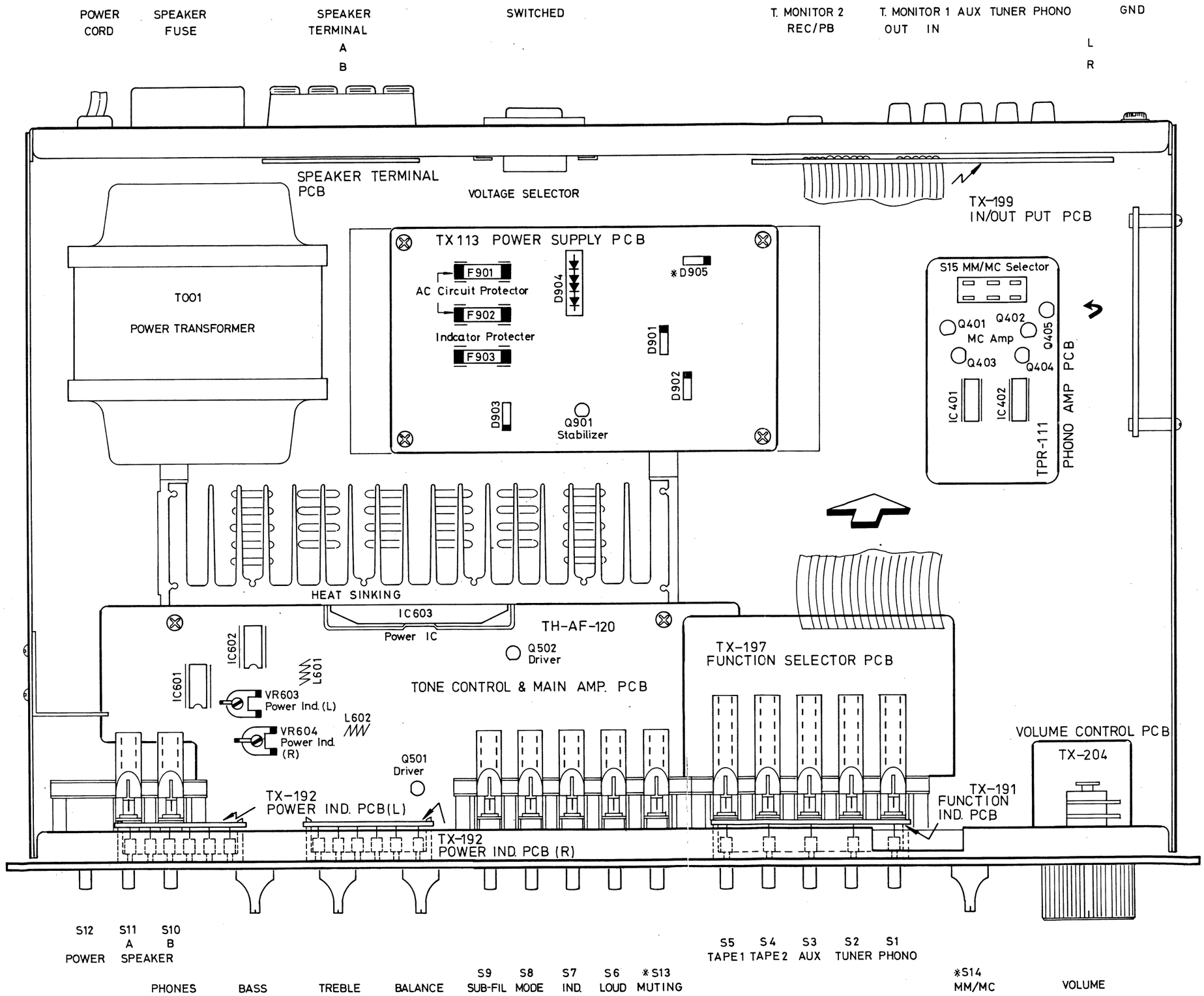
Chassis Layout/Chassis-Anordnung/Installation de Châssis



Power

Instruments: Audio
- Set AUX Switch t
- Set VOLUME Cor
- Set Tone Control
1. Connect 8 ohm
Speaker-A termina
2. Connect AC VTV
of L-ch or R-ch.
3. Connect Audio G

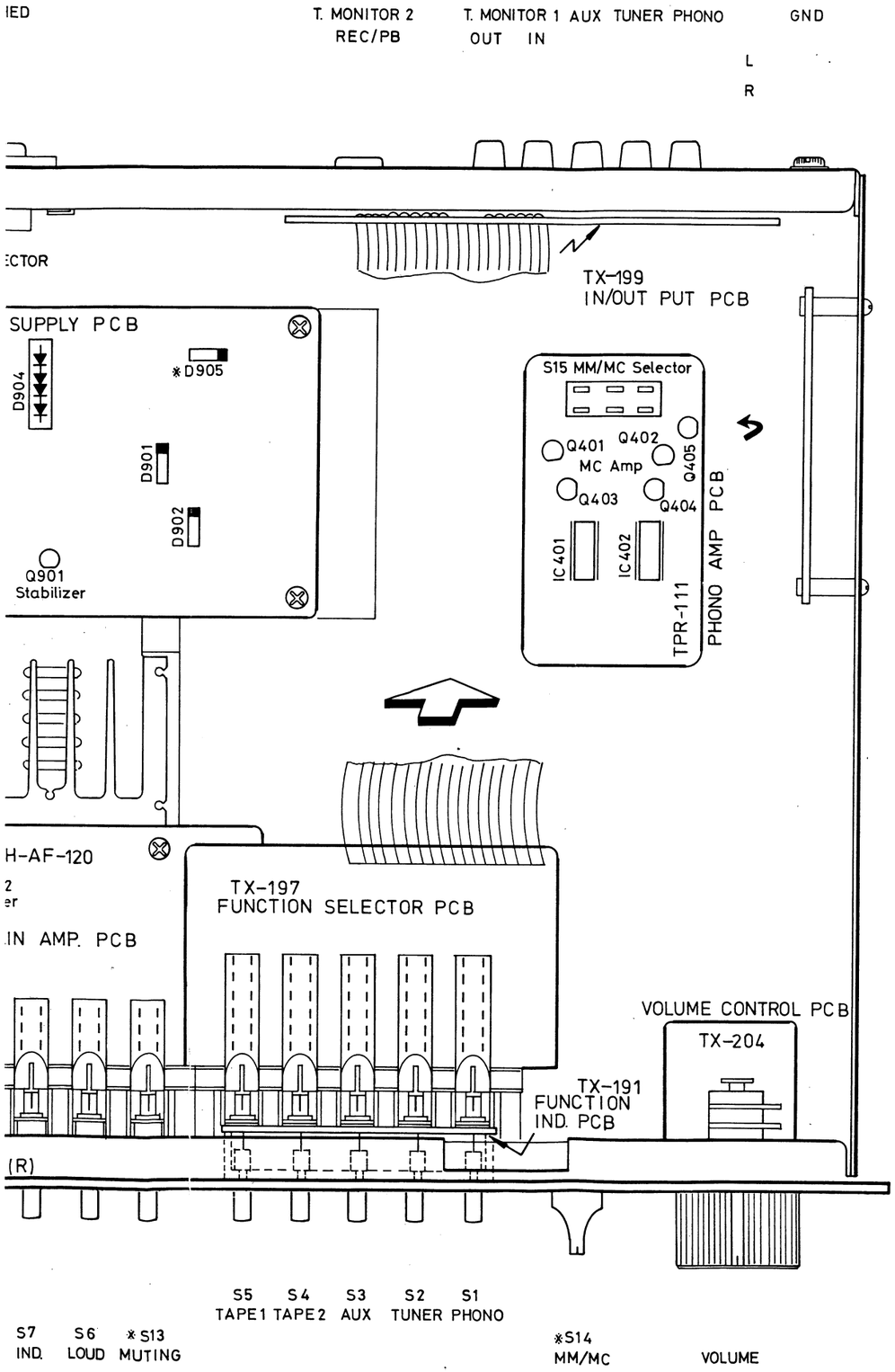
Leistun

Instruments: Tongen
- Setzen Sie AUX
- Setzen Sie Lauts
- Setzen Sie Ton-
1. Verbinden Sie 8
L-ch an Lautsp
2. Verbinden Sie A
Ladung vom L-ch
3. Verbinden Sie To
L-ch oder R-ch,

Calibra

Instruments: Audio-g
- Placer bouton AU
- Placer touche VOL
- Placer touche TON
1. Relier le resistor
bornes d'haut-parl
2. Relier AC VTVM
de L-ch ou R-ch.
3. Relier l'audio-gén
L-ch ou R-ch, e

stallation de Châssis



Power Indicator Calibration

Instruments: Audio Generator and AC VTVM

- Set AUX Switch to "ON" position.
- Set VOLUME Control to Max. position.
- Set Tone Control Switch to Defeat position.

1. Connect 8 ohm 50W resistor to R-ch and L-ch at Speaker-A terminals.
2. Connect AC VTVM in parallel with this 8 ohm load of L-ch or R-ch.
3. Connect Audio Generator to Input terminal of L-ch or R-ch, and apply 1KHz (sine wav signals. Adjust input level so that reading on AC VTVM is 15.5V 30W/8 ohm).
4. Adjust Potentiometer VR603 (L-ch) or VR604 (R-ch) so that Power Indicator must be light up until fifth LED (30W)
5. Reduce input level (–20dB) then set INDICATOR Switch to "ON" position. This Power Indicator will be restore as same as above step 4.

Leistungsanzeigen-Eichung

Instruments: Tongenerator urid AC VTVM

- Setzen Sie AUX Schalter auf "EIN" (on) Position.
- Setzen Sie Lautstärke-Kontrolle auf Max. Position.
- Setzen Sie Ton-Schalter auf Niederlage Position.

1. Verbinden Sie 8 ohm 50W Widerstand zu R-ch und L-ch an Lautsprecher-A-Klemme.
2. Verbinden Sie AC VTVM ähnlich wie diese 8 ohm Ladung vom L-ch oder R-ch.
3. Verbinden Sie Tongenerator zu Eingangsklemme vom L-ch oder R-ch, und wenden 1 KHz (sine wav) Signal an.
   Stellen Sie Eingangspegel ein, um auf AC VTVM (ist 15.5V 30W/8 Ohm) zu lesen.
4. Stellen Sie Potentiometer VR603 (L-ch) oder VR604 (R-ch) ein, Also muss Energieanzeiger bis fünfte LED (30W) erleuchtet sein.
5. Reduzieren Sie Eingangspegel (–20dB), dann setzen Anzeiger Schalter auf "EIN" (on) Position.
   Diese Energie Anzeiger will gleich wie obige Punkt 4 zurückgeben.

Calibrage du Indicateur de puissanc

Instruments: Audio-générateur et AC VTVM

- Placer bouton AUX à la position "ON"
- Placer touche VOLUME à la la position max.
- Placer touche TON à la position de défaite.

1. Relier le resistor 8 ohm 50W à R-ch et L-ch aux bornes d'haut-parleur-A.
2. Relier AC VTVM en parallèle avec cette charge 8 ohm de L-ch ou R-ch.
3. Relier l'audio-générateur à la borne de l'entrée de L-ch ou R-ch, et appliquer les signaux de 1KHz. (sine wav). Régler le niveau de l'entrée de façon à ce que la lecture sur AC VTVM est 15.5V (30W/ 8 ohm).
4. Régler le potentiomètre VR 603 (L-ch) ou VR 604 (R-ch) de façon à ce que l'indicateur puissance doit être allumé jusque cinquième LED (30W).
5. Baisser le niveau de l'entrée (–20 dB) puis placer le bouton d'indicateur à la position "ON".
   Cet indicateur puissance sera rétabli comme le point 4 ci-dessus.

Schematic Diagram/Schaltungsschema/Diagramme schématique

NOTE: PARTS AND CIRCUIT SUBJECT TO CHANGE FOR IMPROVEMENT WITHOUT PRIOR NOTICE

(USED FOR RA-500)

TX-199

TPR-109

TX-197

TX-191

TB-113

TH-AF-120

TT-138-G

TT-138-A

* THIS MARK IS SYMBOL DIFFERENTIAL FOR MODEL NO : RA-550

• CHANGED POWER TRANSFORMER T001 TO TT-138-A (FOR CSA)

TOP VIEW

SIDE VIEW

LB-1416

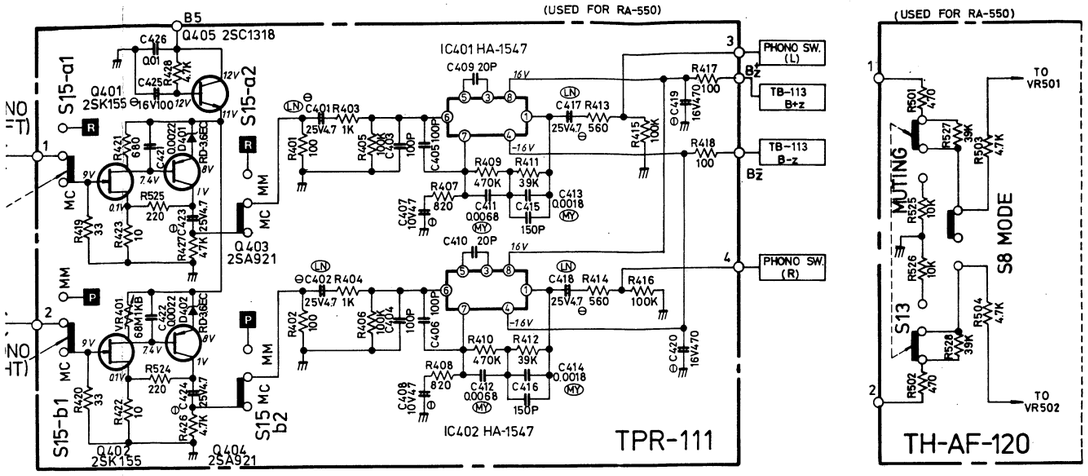
2SA921
2SC1318
2SC1364

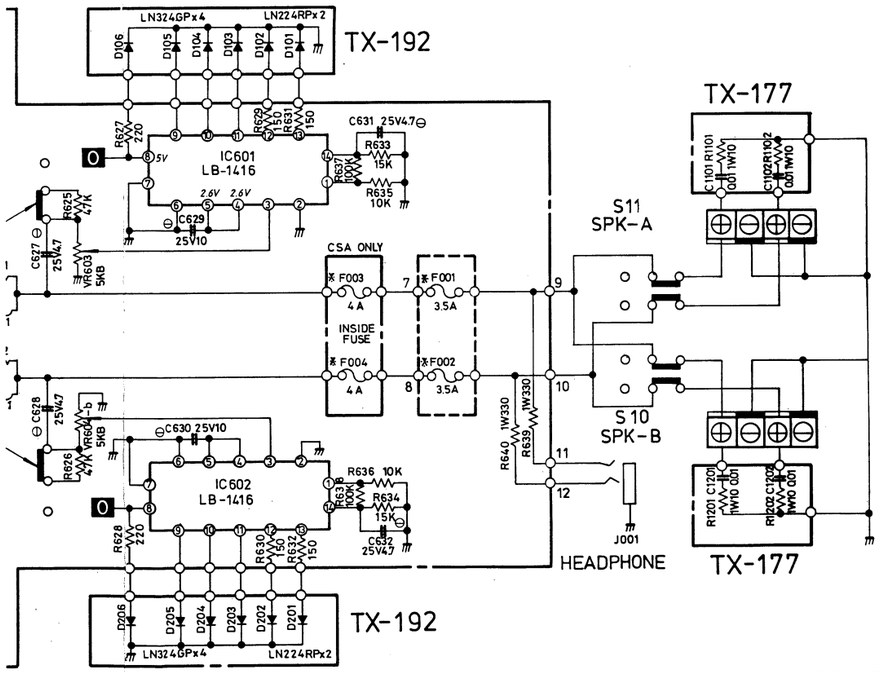
2SK155

HA-1457

SI-1725
SI-1735HD

Gain Diagram/Verstärkungsdiagramm/ Diagramme de gain

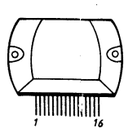




	RA-500	RA-550
C903,904	35V6800	50V6800
R901 902	1W820	1W 1K
R906	12K	15K
F901,902	5A	6A
C607-8,609-10	35V100	50V100
IC603	SI-1725HD	SI-1735HD
F001,002	3.5A	4A
F003,004	4A	4.5A

ITEM	SCHEMATIC LOCATION(LAST)	
PHONO AMP (RA500)	R416	C420
PHONO AMP(RA550)	R428	C426
TONE CONTROL(RA500)	R524	C513
TONE CONTROL(RA550)	R528	C513
MAIN AMP	R640	C634
FUNCTION SELECTOR	R807	—
POWER SUPPLY(RA500)	R909	C910
POWER SUPPLY(RA550)	R910	C911
IN OUT PUT	R1002	—
SPEAKER TERMINAL(L)	R1102	C1102
SPEAKER TERMINAL(R)	R1202	C1202

NO	SI-1725HD	SI-1735HD
3	-33.6V	-37V
4	33V	37V
5	0.9V	0.8V
6	-33.4V	-37V
8	33.6V	37V
9	33.6V	37V
11	-33.4V	-37V
12	1V	0.8V
13	33V	37V
14	-33.4V	-37V

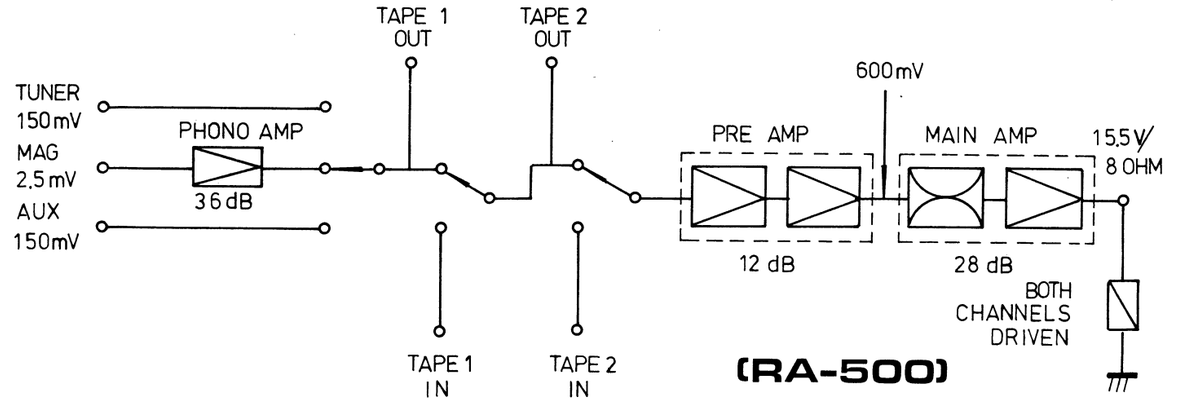


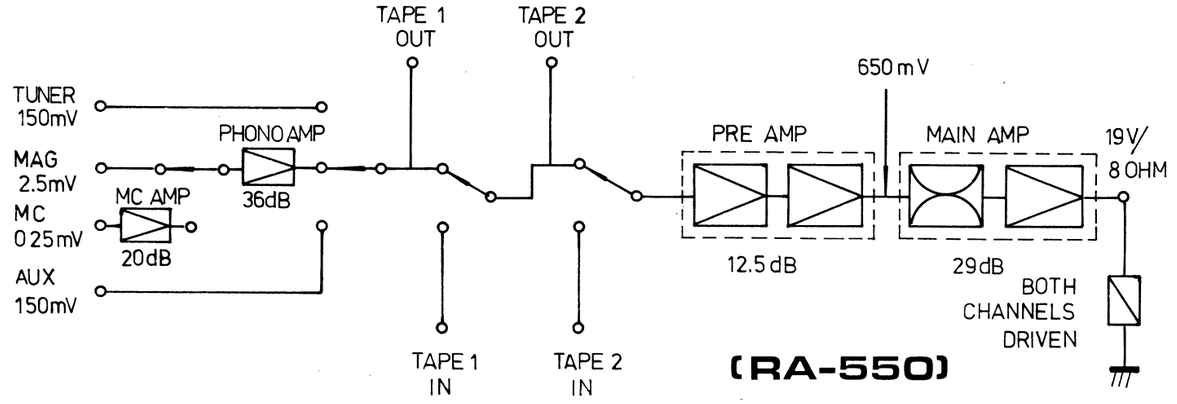
CAPACITORS

(MY) ---- MYLAR FILM CAPACITORS
-||- ---- ELECTROLYTIC CAPACITORS
(LN) ---- LOW NOISE TYPE CAPACITORS
UNLESS OTHERWISE NOTED IN SCHEMATIC ALL CAPACITANCE VALUES ARE EXPRESSED IN MFD

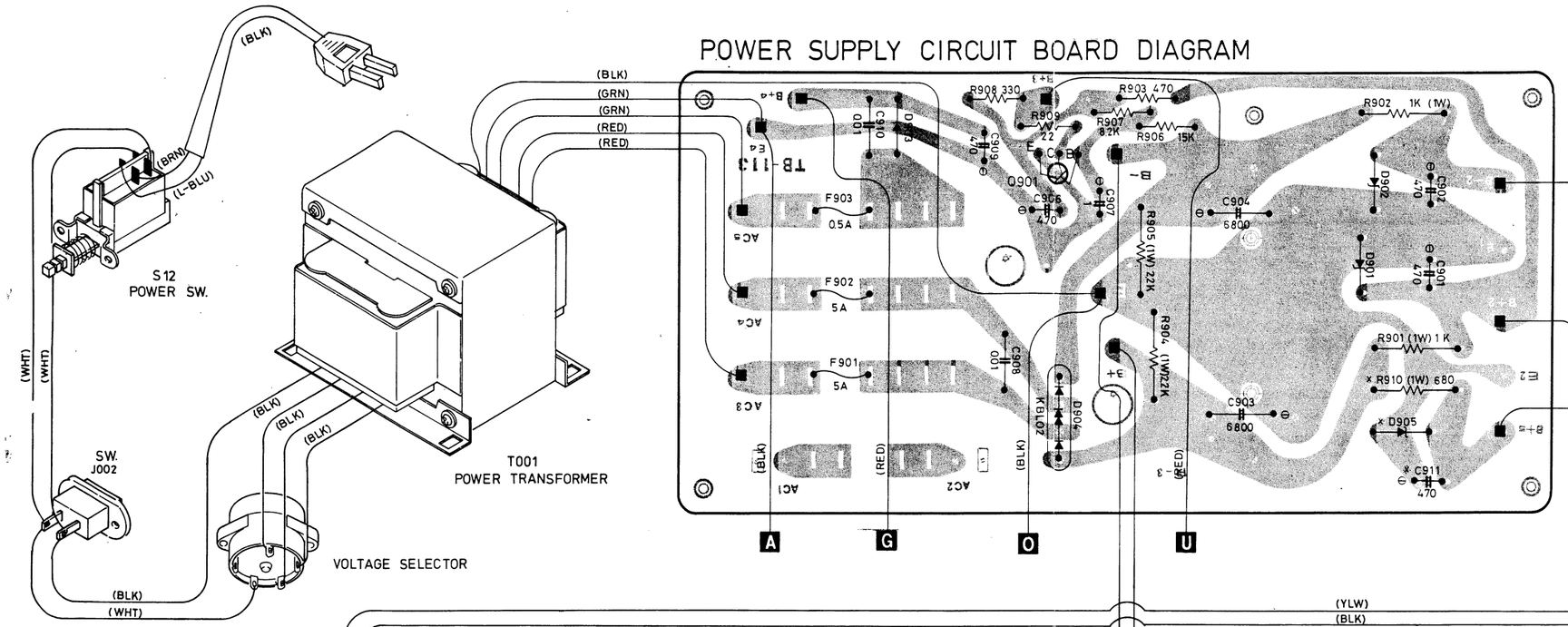
RESISTORS

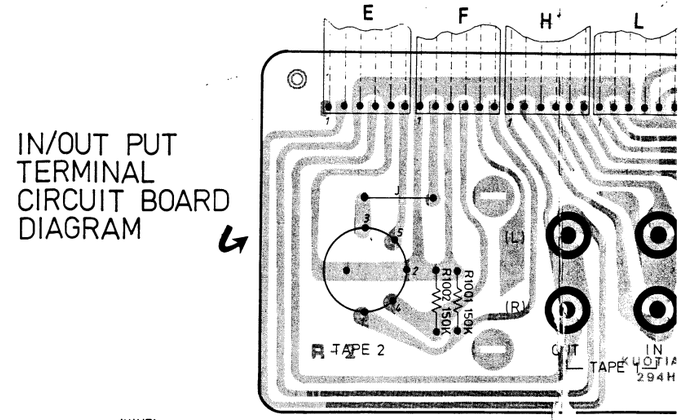
K---KILO OHM
M---MEGA OHM
NON MARK---LOW NOISE CARBON RESISTORS 1/4 WATT.

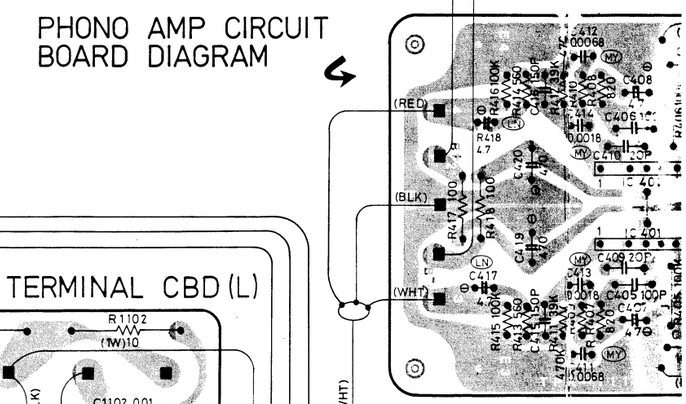


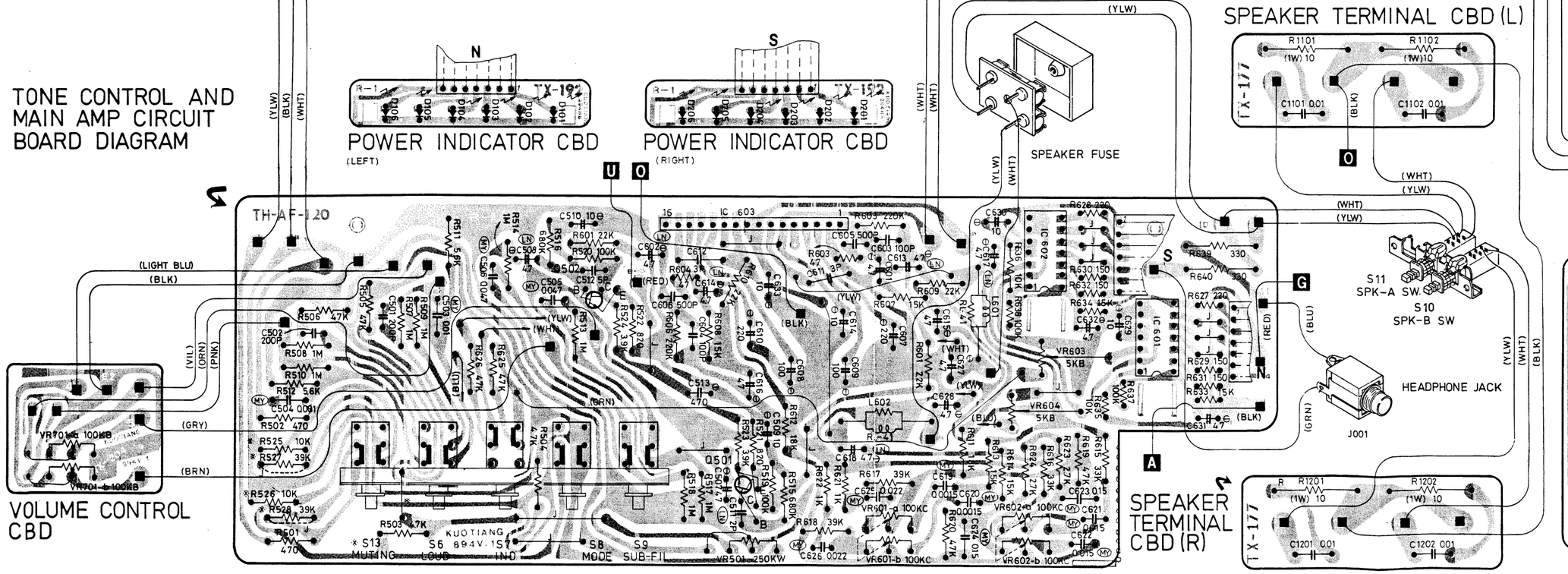


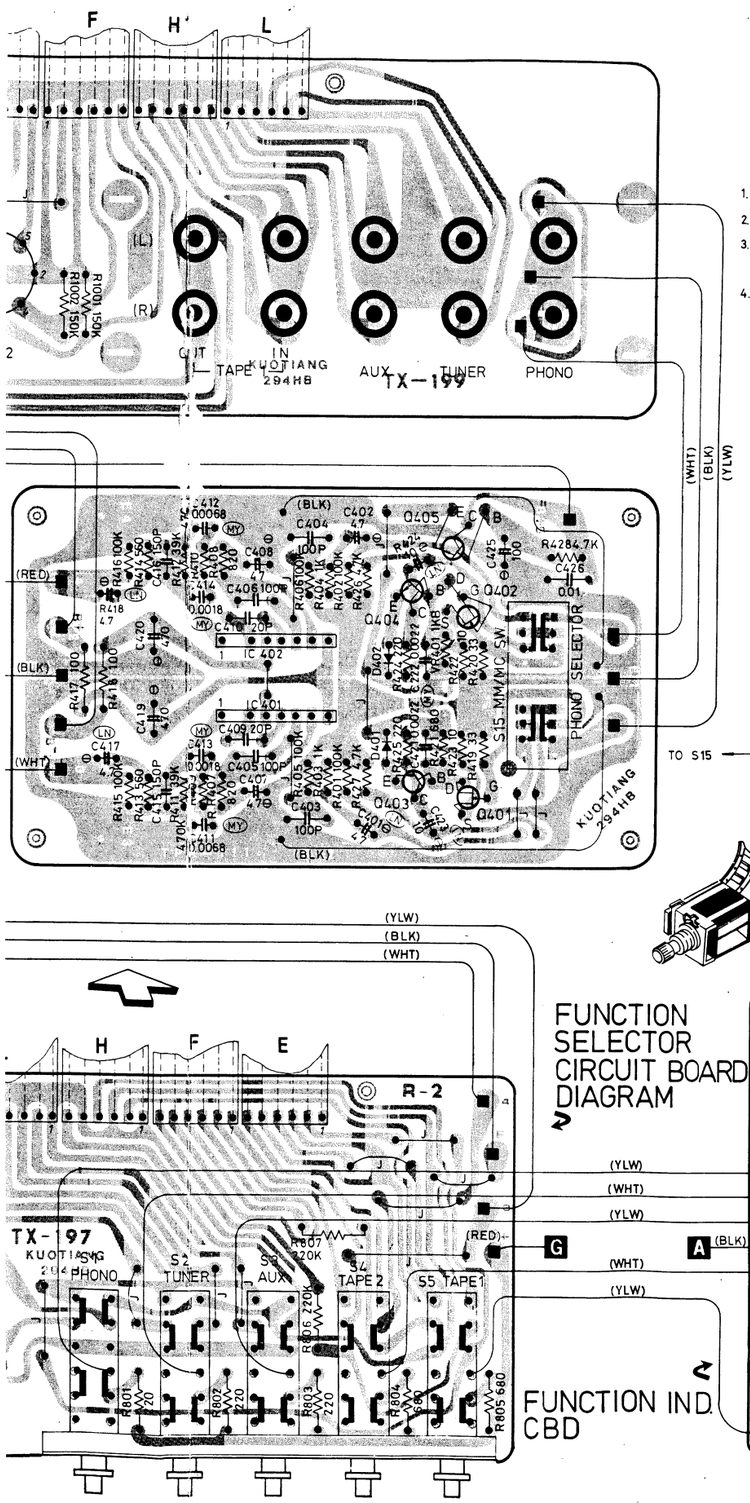
Wiring Diagram/Drahtleitung Diagramm/Diagramme de connexion







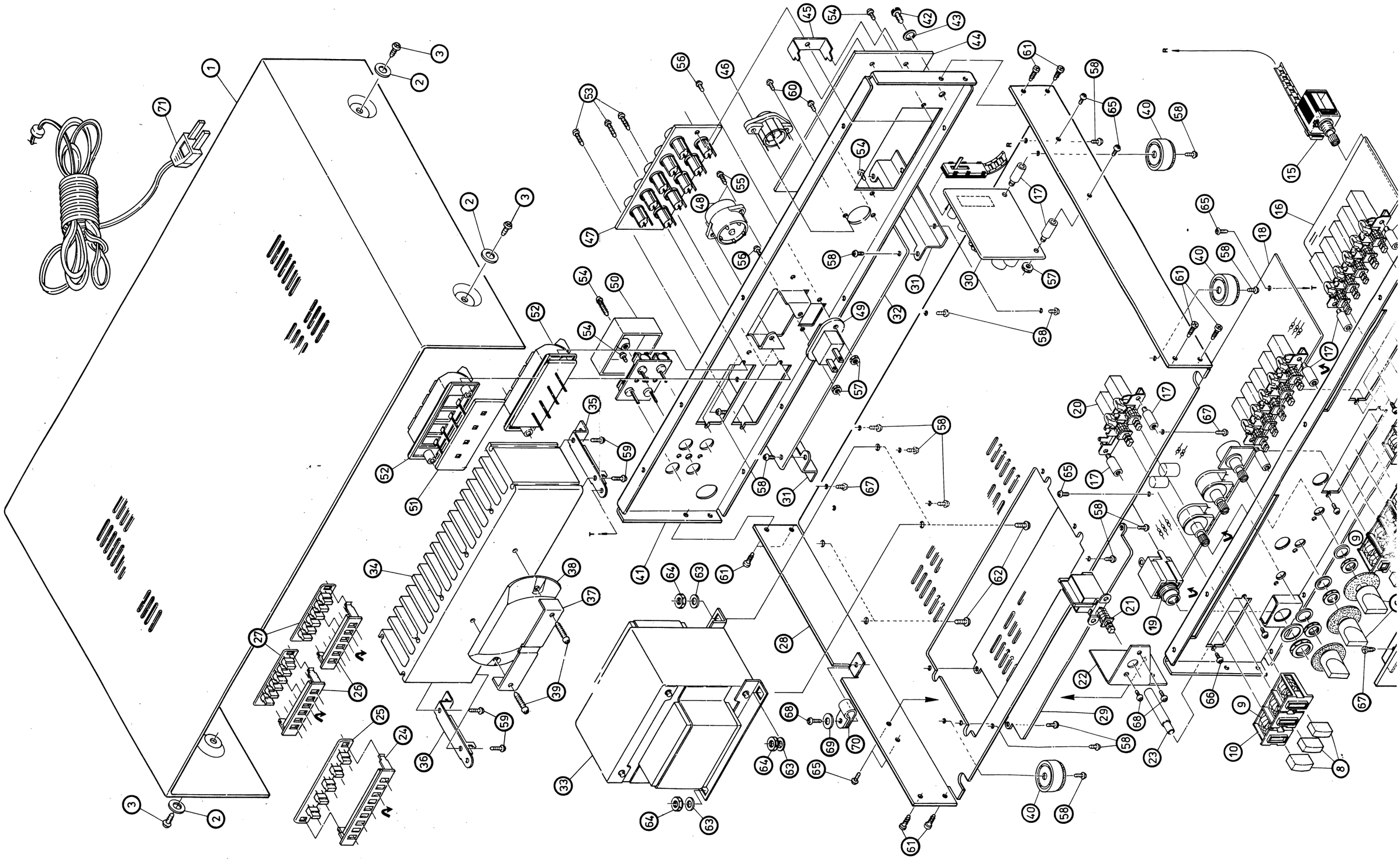


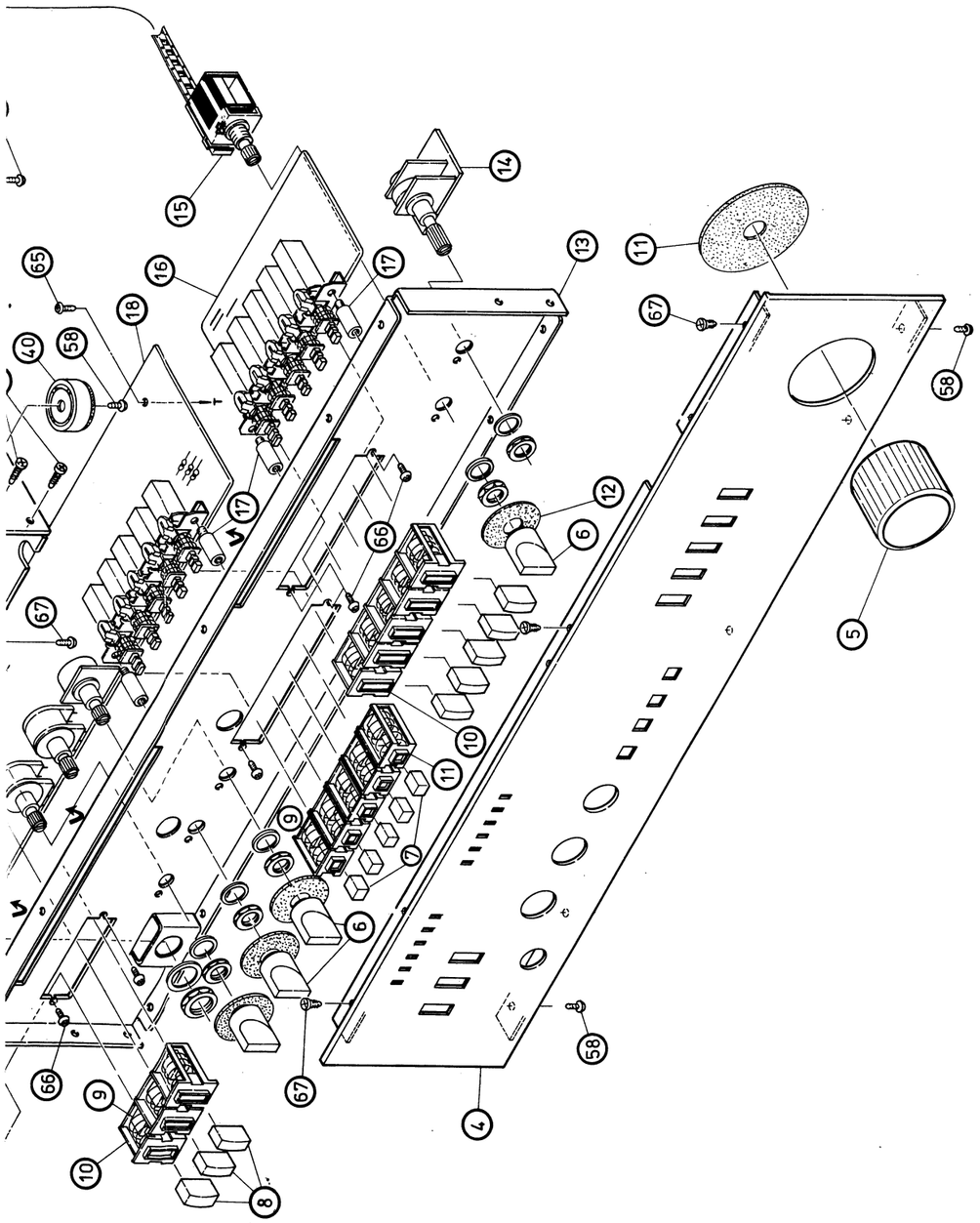


Schematic Location	Parts No.	Description
TRANSISTORS, DIOES AND IC's		
Q401,402	302001123	2SK155 (S), MC Amp. (RA-550 only)
Q403,404	301001145	2SA921 (S), MC Amp. (RA-550 only)
Q405	301201155	2SC1318 (R,S), Regulator (RA-550 only)
Q501,502	301201222	2SC2634 (S,T), Driver
Q901	301201155	2SC1318 (R,S), Stabilizer
D101,102 D201,202	300414042	LN224RP, Power Indicator
D103-106 D203-206	300414040	LN324GP, Power Indicator (Green)
D301-303	300414040	LN324GP, Func. Indicator (Green)
D304,305	300414042	LN224GP, Func. Indicator
D401,402	300313039	RD-3. 6EC, Zener Regulator 3.6V 1/2W
D901,902	300313017	WZ-162, Zener Regulator, 16V 1/2W
D903	300919026	1N4003, Regulator
D905	300313013	WZ-120, Zener Regulator, 12V 1/2W
IC401,402	303452192	HA-1547, Phono Amp.
IC601,602	303452232	LB-1416, Indicator Driver
IC603	303452249	S1-1725HDF, Power Amp. (RA-500)
	303452248	S1-173HDF, Power Amp. (RA-550)
VARIABLE RESISTORS AND SWITCHES		
VR401	510502139	1KB, Gain Adj. (RA-550 only)
VR501	515121131	250KW, Balance Control
VR601,602	525101173	100KCx2, Treble, Bass Control
VR603,604	510502152	5KB, Power Indicator Cal.
VR701	525121145	100KBx2, Volume Control
S1-5	614051021	Switch, Push 5-Key, Phono, Tuner, Aux, Tape 1 and 2
S6-9	614055023	Switch, Push 4-Key, Loud, Ind. Mode and Sub-Fil (RA-500)
S6-9,13	614051022	Switch, Push 5-Key, Muting, Loud, Indicator, Mode and Sub-Fil (RA-550)
S10,11	614030837	Switch, Push 2-Key, Speaker A and B
S12	610410139	Switch, Power Supply (for UL, CSA) ⚠
	614010138	Switch, Power Supply (for BEAB)
S14	654101153	Switch, Phono Selector (RA-550 only)
S15	615212283	Switch, Slide, MM/MC

Schematic Location	Parts No.	Description
OTHERS		
C001,002	422680435	Smoothing Capacitor, 35V/6800μ (RA-500)
	422680450	Smoothing Capacitor, 50V/6800μ (RA-550)
F001,002	341221350	Fuse, 3.5A, Speaker Prot. (Long Size RA-500)
	345222350	Fuse, 3.5A, Speaker Prot. (Mini Size RA-500)
	345252350	Fuse, 3.5A, Speaker Prot. (Mini Size with S Mark RA-500) ⚠
	341221400	Funse, 4A, Speaker Prot. (Long Size RA-550)
	345222400	Fuse, 4A, Speaker Prot. (Mini Size RA-550)
	345252400	Fuse, 4A, Speaker Prot, (Mini Size with S Mark RA-550) ⚠
F003,004	341221400	Fuse, 4A, Inside, Speaker Prot. (RA-500 CSA only)
	341221450	Fuse, 4.5A, Inside, Speaker Prot. (RA-550 CSA only)
F901,902	341221500	Fuse, 5A, AC Circuit Prot. (Long Size RA-500)
	345222500	Fuse, 5A, AC Circuit Prot, (Mini Size RA-500)
	345252500	Fuse, 5A, AC Circuit Prot, (Mini Size with S Mark RA-500) ⚠
	341221600	Fuse, 6A, AC Circuit Prot. (Long Size RA-550)
	345222600	Fuse, 6A, AC Circuit Prot. (Mini Size RA-550)
	345252600	Fuse, 6A, AC Circuit Prot. (Mini Size with S Mark RA-550) ⚠
F903	341221050	Fuse, 0.5A, Indicator Prot. (Long Size)
	345222050	Fuse, 500mA, Indicator Prot. (Mini Size)
	34252050	Fuse, 500mA, Indicator Prot. (Mini Size with S Mark) ⚠

Disassembly Diagram/Illustration des Auseinaderbaus/Schéma de démontage





Key No.	Parts No.	Description
1.	138011310	Upper Cover
2.	770500002	Washer, 4.2φx10φx1φ BK
3.	705220408	Screw, +M4x8 SMB
4.	111911501	Front Panel Ass'y (RA-500)
	111911502	Front Panel Ass'y (RA-550)
5.	116310306	Knob, 33$^{\phi}$, Volume
6.	116310304	Knob, 13$^{\phi}$, Bass, Treble. . . etc.
7.	116210074	Push Button (Sub-Fil Mode. . . . etc)
8.	116210073	Push Button (Function, Power . . . etc)
9.	114902319	Frame, Push Button (Sub-Fil, Mode . . . etc.)
	648601130	Spring, Frame
	114902320	Shaft, Frame
10.	114902318	Frame, Push Button (Function, Power . . . etc.)
11.	990201330	Felt, Knob (33$^{\phi}$)
12.	990201328	Felt, Knob (13$^{\phi}$)
13.	122011408	Front Chassis Ass'y
14.	141811009	Volume Control PCB Ass'y
15.	654101153	Switch, Phono Selector with Flex Wire
16.	141811012	Function Switch PCB Ass'y
17.	770911263	Cylinder Bush, Inner Screw
18.	141610338	Tone Control and Main Amp. PCB Ass'y (RA-500)
	141610340	Tone Control and Main Amp. PCB Ass'y (RA-550)
19.	626110035	Jack, Headphone
20.	614030837	Switch, Push 2-Key, Speaker A and B
21.	614010138	Switch, Power Supply (for BEAB) ⚠
	614010139	Switch, Power Supply (for CSA, UL)
22.	120012932	Support, Power Switch
23.	654101154	Lever, Power Switch
24.	114902321	Holder, Func, Ind.
25.	141811010	Func. Ind. PCB Ass'y
26.	114902322	Holder, Power Ind.
27.	141811011	Power Ind. PCB Ass'y
28.	121011347	Chassis Bady
29.	120012937	Bottom Mask
30.	141510176	Equalizer Amp. PCB Ass'y (RA-500)
	141510177	Equalizer Amp. PCB Ass'y (RA-550)
31.	120012936	Support, PCB
32.	141811013	Power Supply PCB Ass'y (RA-500 with Long Long Size Fuse)
	141811014	Power Supply PCB Ass'y (RA-500 with Mini Size Fuse)
	141811015	Power Supply PCB Ass'y (RA-500 with Mini S Mark)
	141811016	Power Supply PCB Ass'y (RA-550 with Long Size Fuse)
	141811017	Power Supply PCB Ass'y (RA-550 with Mini Size Fuse)
	141811018	Power Supply PCB Ass'y (RA-550 with Mini S Mark)
33.	207001500	Transformer, Power Supply (RA-500 Multi-Type) ⚠
	201001502	Transformer, Power Supply (RA-500 120V only CSA)
	207001501	Transformer, Power Supply (RA-550 Multi-Type) ⚠
	201001503	Transformer, Power Supply (RA-550 120V only CSA)
34.	127012254	Heat Sinking (RA-500)
	127012253	Heat Sinking (RA-550)
35.	120012935	Support (L), Heat Sinking (RA-550)
36.	120012934	Support (R), Heat Sinking (RA-550)
	120012933	Support, Heat Sinking (RA-500)
37.	120012879	Support, IC
38.	303452249	Power IC (RA-500)
	303452248	Power IC (RA-550)
39.	703213038	Scrwe, +M3x18
40.	673402025	Plastic Foot
41.	123011524	Rear Panel Ass'y (RA-500)
	123011525	Rear Panel Ass'y (RA-500 for UL)
	123011526	Rear Panel Ass'y (RA-500 for CSA)
	123011529	Rear Panel Ass'y (RA-550)
	123011527	Rear Panel Ass'y (RA-550 for UL)
	123011528	Rear Panel Ass'y (RA-550 for CSA)
42.	770911126	Screw, GND, –M4x8
43.	770500004	Washer, 4.2$^{\phi}$x10$^{\phi}$x1^{t}
44.	141811051	IN/OUT PUT Terminal PCB Ass'y
45.	120012596	Support, IN/OUT PUT Terminal PCB
46.	625001119	Jack, DIN, 5p (PCB Type)
47.	624300210	Jack, RCA, 10P (PCB Type)
48.	648211247	Voltage Selector (Multi-Type)
49.	648211116	Socket, AC Outlet
50.	648211157	Holder, 2P, Fuse (for UL. CSA)
	648211162	Holder, 2P, Fuse (for BEAB) ⚠
51.	141811051	Speaker Terminal PCB Ass'y
52.	642400114	Terminal, push 4P, Speaker A and B
53.	726203008	Screw, +M3x10, JT2V BK
54.	766223006	Screw, +M3x6 STV BK
55.	766223008	Screw, +M3x8 STV BK
56.	770911113	Screw, Flet, M3x10 BK
57.	770402201	Nut, M3
58.	726203006	Screw, +M3x6 BTV MC
59.	766203008	Screw, +M3x8 STV MC
60.	726223008	Screw, +M3x8 BTV BK
61.	722203008	Screw, +M3x8 JT20MC
62.	765204010	Screw, +M4x10 CTB MC
63.	770500004	Washer
64.	770402202	Nut, M4
65.	766203006	Screw, +M3x6 STV MC
66.	703213006	Screw, +M3x6 Pan Head
67.	701203006	Screw, +M3x6 SMF
68.	726223008	Scrwe, +M3x8 BTV MC
69.	770500003	Washer, 3.2$^{\phi}$x8$^{\phi}$x0.5^{t}
70.	672200832	Connector, Line Cord
71.	796301115	Line Cord
	796301149	Line Cord (for Europe)
	796301125	Line Cord (for Austria)
	796301138	Line Cord (for BEAB) ⚠

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ROTEL OF AMERICA, INC. 13518 SOUTH NORMANDIE AVENUE GARDENA, CALIF. 90249. U. S. A.

Printed in Taiwan '80 Jun 835201349